

REMARKS

Claims 21-40 are pending in the above-identified application. Claim 21 is independent.

Applicant amended independent claim 21 to clarify that the different layers are non-fixedly attached to each other. Support for this clarification is provided throughout the application, including, for example, at paragraphs 7-8 of page 1 of the published application (US 2005/0121913). Applicant also amended claim 29, 30, 32, 36 and 38 to correct antecedent problems.

The examiner objected to claims 21 on the ground that a space was missing in “fittingcomprises” in line 1. Applicant amended claim 21 accordingly.

The examiner objected to claims 29 and 38-39 on the ground that “colour” should be changed to “color”. In the interest of expediting prosecution, applicant amended claims 29 and 38-39, as well as claim 34, as requested by the examiner.

The examiner rejected claims 37-38 under 35 U.S.C. §112, second paragraph on the ground that it is unclear if “a support” is positively being recited in the claim. Applicant amended claim 37 to replace the wording “wherein a support ...” with “further comprising a support ...” to clarify that the support is recited as part of the pipe fitting. Applicant thus traverses the examiner’s rejection under 35 U.S.C. §112, second paragraph.

The examiner rejected claims 21-23, 25-26, 29-31 and 37-40 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No.6,220,634 to Burrowes. The examiner also rejected claims 21, 32 and 34-36 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,743,569 to Deters et al. Further, the examiner rejected claims 21 and 27-28 under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,717,182 to Behrens et al. The examiner rejected claim 24 under 35 U.S.C. §103(a) as being unpatentable in view of Burrowes, and rejected claim 33 under 35 U.S.C. §103(a) as being unpatentable in view of Deters.

Applicant’s amended independent claim 21 recites a pipe fitting having an innermost layer and an outer layer “wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer.” As explained in the application:

An advantage of the invention is that the manufacturing costs of the pipe fitting are low. Further, oxygen diffusion protection and UV protection of the pipe fitting are very good, which is important when, for example, parts are stored on construction sites for long times and pipe fittings are used in surface mounting. The pipe fitting can be provided with an extremely good chemical resistance. Further, it is simple and easy to modify the appearance of the pipe fitting. It is also easy to make the impact resistance of the pipe fitting extremely good. When the different layers are not attached to each other, the pipe fitting is very resistant to shear stress. This is because the surfaces that are moving/separate relative to each other transfer forces more flexibly and more advantageously. The different layers of the pipe fitting can be formed at different times, because it is not desirable that the different layers become attached to each other. Hence, forming the production process of the pipe fitting is reasonably simple. Further, the material of the innermost layer can be selected to be rather hard, whereby the outer layer is not easily attached to the hard material. The material of the inner layer is preferably very hard in order for it to bore into the softer inner wall of the pipe to be fitted upon implementation of the fitting, and to form a tight fitting. Forming a stop member of the end of the outer layer makes the connecting of the pipe to the pipe fitting easy, and thus, a tight and reliable fitting is ensured. In addition, since the end of the outer layer functions as the stop member, no other stop member is required that would make it difficult to keep the system clean, for instance. (page 1, paragraph 8 of the published application)

Thus, the innermost and outer layers are non-fixedly attached to each other such that while they are in contact (as shown, for example, in FIG. 1), the two layers can nevertheless move with respect to each other. In other words, the two layers loosely contact each other, but are not rigidly secured to each other. By having the innermost and outer layers non-fixedly attached, the pipe fitting becomes more resistant to shear stress, the production process of the pipe fitting is simplified, and the pipe fitting can more efficiently cope with multiple design requirements (e.g., be resistant to chemical erosion, have adequate heat tolerance, etc.).

In contrast, none of the references cited by the examiner discloses a pipe fitting having an innermost and outer layers "wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer."

Burrowes describes a branched hose construction that includes an insert 11 having at least three legs, and made of a rigid material (FIG. 2, and col. 2, lines 41-52). Hoses 12 are placed inside the insert 11. (Applicant notes that the examiner equated the innermost layer to

Burrowes part 12; however, it is the hoses in Burrowes, which are not part of the branched hose construction, that are marked as element 12.) Burrowes explains that:

A saddle 30 is molded around the junction of the hoses and the insert 11. The rubber composition which is used as the molded saddle 30 is comprised of (a) an EPDM alloy comprised of (i) functionalized EPDM rubber, (ii) an EPDM rubber having nylon side chains grafted thereto and (iii) dispersed nylon, (b) an EPDM rubber and (c) fibrillated aramid fibers. (emphasis added, col. 3, lines 12-18)

As indicated by Burrowes, the saddle 30, which the examiner equated to the outer layer, is molded onto the junction of the hoses and the insert 11, and thus the saddle 30 is rigidly and tightly connected to the insert 11 (for that matter, the hoses 12 are also rigidly and tightly connected to the saddle 30). Accordingly, Burrowes neither discloses nor suggests at least the feature of “wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer,” as required by applicant’s independent claim 21.

Deters describes a repairable molded-in-place hose connection (col. 1, lines 6-10). FIG. 1 shows a typical hose connection design that for the most part is used with Deters’ hose connection design. Particularly, as described by Deters in relation to FIG. 1:

The connection comprises a rigid inner connector 15 having a plurality of tubular ends 16, which preferably include ribs or annular barbs 17, onto which the ends of the hoses 10, 12 and 14 are fitted, and a rigid outer connector 18 molded in place about the inner connector 15 and assembled hose ends. Assuming, for example, that hose 12 fails, in the past the entire set of three hoses and connector must be replaced. (emphasis added, col. 2, lines 24-31)

Thus, the rigid outer connector 18 is molded in place about the rigid inner connector 15. The connector 18 is, therefore, rigidly attached to the inner connector 15.

Deters’ design, as shown in FIG. 2, is similar to the design shown in FIG. 1, except that the FIG. 2 design includes frangible sections that are formed in the outer connector (which in FIG. 2 is marked with reference numeral 20). These frangible sections are radially extending slots 22 that enable fracturing of the outer connector if it becomes necessary to remove one of the hoses (col. 2, lines 32-58). However, the hose connection design shown in FIG. 2 is

otherwise the same as that shown in FIG. 1, and accordingly the outer connector 20 is molded onto the underlying inner connector 25. Thus, the inner connector 25 and the outer connector 20 are rigidly and tightly connected to each other. Deters, therefore, also fails to disclose or suggest at least the feature of "wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer," as required by applicant's independent claim 21.

The examiner argued, in relation to the Deters reference, that the section of outer connector 20 that has been removed corresponds to the feature of an innermost layer and outermost layer moving relative to each other. However, applicant notes that where the material from outer connector 20 has been removed, the inner connector 25 and outer connector 20 do not contact each other, and therefore they cannot be said to be non-fixedly attached to each other.

Behrens describes a coupling sleeve for pipes (Abstract). Particularly, Behrens' sleeve 3 includes a cylindrical carrier body portion 7 having ends 8, with each end having an inner diameter 9. Behrens states that the carrier body portion 7 comprises a glass fiber roving cloth of a basket weave nature (col. 6, lines 1-2). As shown in FIG. 1, the sleeve include various layers that encase the carrier portion 7. Behrens describes these encasing layers as follows:

When the outside diameter of the coupling sleeve 4 is for example 1000 mm, the carrier body portion 7 comprises for example approximately twenty layers or plies of glass fiber roving cloth, with a width of 550 mm, which is embedded in synthetic resin such as epoxy resin.

In the respective end regions 11 of the coupling sleeve 3, which is provided between the respective end face 8 and the internal peripheral groove 4 which is disposed adjacent thereto, a plurality of layers or plies or glass fiber rovings are wound around the outside of the carrier body portion 7. The greatest tensile strength of those glass fiber rovings is oriented in the peripheral direction of the coupling sleeve 3, being for example 4800 tex. The glass fiber rovings are again embedded in synthetic resin such as epoxy resin. When producing the windings around the end regions 11 of the coupling sleeve 3, it is important that the tensile stress in the rovings is kept at a uniform and sufficiently high value, during the winding operation.

Between the glass fiber-encased end regions 11 of the coupling sleeve 3, the carrier body portion 7 is encased on its outside by a portion 12 comprising for example polystyrene foam whose density is 30 g/dm.sup.3. The outside closure layer or external casing portion of the coupling sleeve 3 is formed by a thin layer 13 which for the sake of simplicity is advantageously wound

from the same glass fiber rovings as those which also wind around the end regions 11 of the coupling sleeve 3. (emphasis added, col. 6, lines 12-40)

Thus, the exterior layers of the sleeve 3 are wound around the carrier body portion, indicating that all the various layers of the sleeve 3, including exterior layers surrounding the inner carrier body portion 7, are tightly connected to each other, resulting a rigidly formed structure. Accordingly, Behrens does not disclose or suggest at least the feature of "wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer," as required by applicant's independent claim 21.

The examiner referred to the layer 13 of Behrens' coupling sleeve as corresponding to the outer layer recited in claim 21. However, applicant notes that layer 13 does not at all come in contact with the carrier body portion 7, and therefore layer 13 cannot be said to be non-fixedly attached to the carrier body portion 7.

Because none of the references cited by the examiner discloses or suggests, alone or in combination, at least the feature of "wherein the materials of the different layers are selected in such a way that the outer layer is non-fixedly attached to the innermost layer," applicant's independent claim 21 is patentable over the cited art.

Claims 22-40 depend from independent claim 21, and are therefore patentable for at least the same reasons as applicant's independent claim 21.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing remarks, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made

Applicant : Jarmo Smahl
Serial No. : 10/501,802
Filed : February 9, 2005
Page : 11 of 11

Attorney's Docket No.: 13162-014US1 / 2011810US

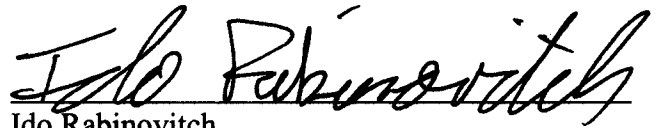
arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

Enclosed is a Petition for One Month Extension of Time. The fees in the amount of \$120 are being paid concurrently on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

Date:

Dec. 5, 2006



Ido Rabinovitch

Reg. No. L0080

PTO Customer No. 26161
Fish & Richardson P.C.
Telephone: (617) 542-5070
Facsimile: (617) 542-8906